Application No.10/737,132
Amendment dated October 9, 2006
Reply to Office action of July 20, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 and 2 (Canceled).

Claim 3 (currently amended): A ~~mathematical~~ training system ~~according to Claim 2~~ ~~including~~ for teaching a student to operate an abacus for performing a mathematical calculation, comprising,

an abacus having a plurality of counter beads slidably mounted on a plurality of guide bars, said counter beads being operative slidably relative to said guide bars for carrying out said mathematical calculation,

motion sensors located below said counter beads and operative for detecting movements of said counter beads and generating a series of electrical signals representing movement sequence of said counter beads in carrying out said mathematical calculation,

electrical control and conversion circuit means connected to said motion sensors and in combination with a microprocessor operative to convert said series of electrical signals to digital data signals,

a ~~computing device~~ computer including ~~having~~ a display monitor and adapted to receive and process said digital data signals for displaying ~~a pictorial representation~~ an image of said

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abacus and ~~sequential~~ movements of said counter beads during operation of said abacus for said

mathematical calculation.

Claim 4 (currently amended) A ~~mathematical~~ training system according to Claim 3

wherein said motion sensors include a light emitting portion and a light receiving portion situated

opposite to one another with an air gap located therebetween, and baffle ~~members~~ panels are

mounted on said counter beads and extending downwards from each one of said counter ~~bead~~

beads to said air gap of an associated sensor located directly below said each one of said counter

~~bead~~ beads.

Claim 5 (currently amended) A ~~mathematical~~ training system according to Claim 4

wherein said baffle panels ~~is~~ are normally located in said air gap of ~~each sensor~~ said sensors for

blocking the light from said emitting portion of said ~~sensor~~ sensors from impinging on said light

receiving portion, and said baffle panels sequentially blocking and unblocking said light when

said counter beads are operated slidably up and down said guide bars during the mathematical

calculation whereby said electrical signals are generated by said sensors in cooperation with said

conversion circuit means and said microprocessor.

Claim 6 (currently amended) A ~~mathematical~~ training system according to Claim 5

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wherein said sensors, said conversion circuit means and said microprocessor are mounted on a

components circuit board located below said abacus, and ~~including~~ an output port is located on

said components circuit board and adapted for ~~electrical~~ connection with said ~~computing device~~

computer for displaying ~~a pictorial representation of the operation of the~~ said image of said

abacus in ~~a monitor~~ said display monitor showing said sequential movements of said counter

beads for making said mathematical calculation.

Claim 7 (currently amended) A ~~mathematical~~ training system according to Claim 6

including recording means in said computer adapted for recording said digital data signals

whereby the operation of the abacus by ~~a~~ the student for ~~solving an mathematical assignment~~

carrying out said mathematical calculation is retrievable by an instructor to review the operation

of the abacus step by step by the student ~~for solving the mathematical assignment~~.

Claim 8 (currently amended) A ~~mathematical~~ training system according to Claim 6

wherein said ~~monitor~~ display monitor simultaneously shows ~~pictorial representation of~~ both

images of ~~the operation of the~~ an instructor's abacus and ~~the operation~~ the student's abacus for

the student to operate the student's abacus by following the operation of the instructor's abacus

by the instructor for carrying out said mathematical calculation in a correct sequence of operating

said counter beads.